

Big Sur and Garrapata Creek Bridge Rail Replacement Project

→ *Frequently Asked Questions*

Why can't the rail be replaced in-kind, or a Design Exception be granted?

The current Manual for Assessment of Safety Hardware (MASH) standards require more structural steel to withstand vehicular impacts, and require fewer snagging hazards for errant vehicles than the original rail that was designed in the 1930's. Also, current bicyclist standards call for each clear opening between balusters to be narrower than those on the original rail.

The County had asked Caltrans to summarize the design exception process. It should be noted, for bridge rail replacement types, a design exception could be granted by the State Bridge Engineer, but both the current and former State Bridge Engineer stated that they would not grant an exception to bridge design specifications for rail opening size or barrier shape that could provide snag points. What the Department is proposing is a bridge railing that was custom designed for this location and was approved based on standardized crash tests and studies that meet State and Federal safety standards and specifications, including MASH compliance.

What rail type design options were pursued to increase the width of the clear opening?

A total of 11 bridge rail design options have been developed for use. The rail options are based on the Caltrans Concrete Barrier Type 86H. Option 1 has 6-inch clear openings between chamfered concrete balusters with no metal elements, and Option 2 has

10-inch clear openings with metal elements included (Please refer to cut sheets). Steel or reinforced concrete bridge rails are required and must meet crash testing guidelines (Manual for Assessment of Safety Hardware). Railing must also account for human safety of pedestrians and bicyclists. Reinforced concrete bridge railings have been selected for environmental suitability and to match the existing bridge rail materials.

The existing rail type cannot be replaced in-kind, it cannot meet current highway safety needs. The existing rail fails to meet safety requirements with today's vehicle occupant safety requirements. Option 1 with 6-inch clear openings between chamfered concrete balusters is the preferred option of the Project Development Team (PDT) and was designed in collaboration with the Aesthetic Design Advisory Committee (ADAC). Option 2A includes a metal element in a 10-inch clear opening for MASH compliance.

What was the extent of public outreach and how was public input incorporated into the design of the project?

An Aesthetic Design Advisory Committee (ADAC) was created by Caltrans to assist with aesthetic design decisions related to the proposed bridge rail replacement. The ADAC was comprised of local agency representatives and community citizens where they participated in a series of 6 meetings and design charettes (workshops) over a 4-month period. Monterey County hearings resulted in new design options that allow for 10-inch clear openings with metal elements.

Is the designated speed limit used to determine bridge rail clear opening width and shape?

A maximum 6-inch clear opening width is required for all approved barrier rails regardless of the designated speed limit. Speed would also not be a factor in the general shape of bridge rail- any bridge rail on State Highways will need to meet MASH Standards.

How many crashes have occurred on Garrapata Creek Bridge?

Between 2013-2023 a total of 10 crashes have been reported on and adjacent to the bridge. During this period, 7 crashes involved injury.

In the same 10-year period, 921 lane departure crashes occurred on Highway 1 (SLO County Line to Point Lobos). A total of 24 people died and 532 people were injured in lane departure crashes during this time. Lane departure crashes can be left or right of the traveled lane. Modern bridge rail aims to redirect lane departures to keep vehicles on the highway as opposed to the road, creek, or canyon they are crossing over.

